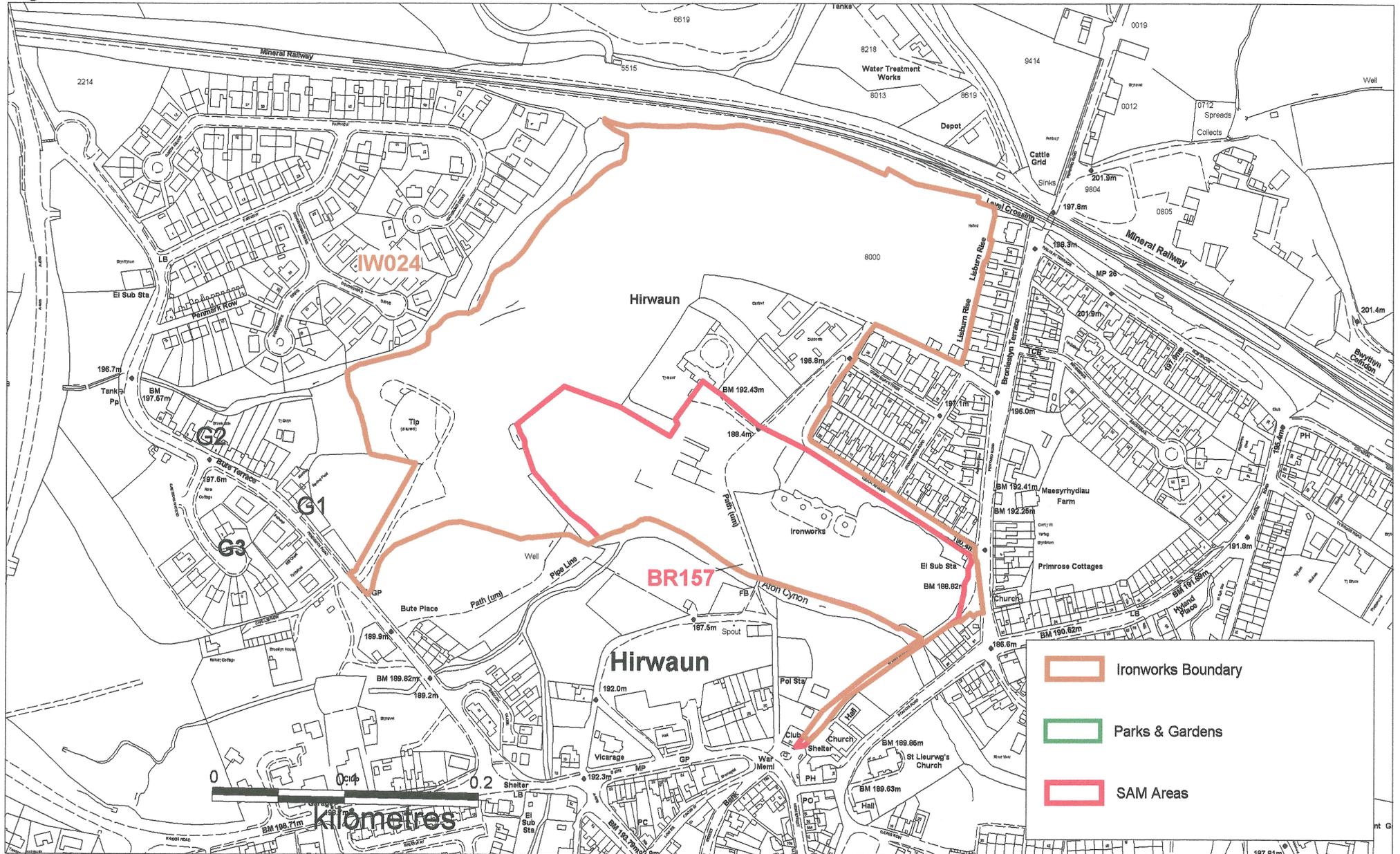


Plate 012 Hirwaun Ironworks IW024



Plate 012: Furnace bank site Hirwaun Ironworks (SAM BR157), view to northeast. The entire area including the scheduled remains is in an increasingly derelict and overgrown state.

Figure 29a Hirwaun Ironworks IW024



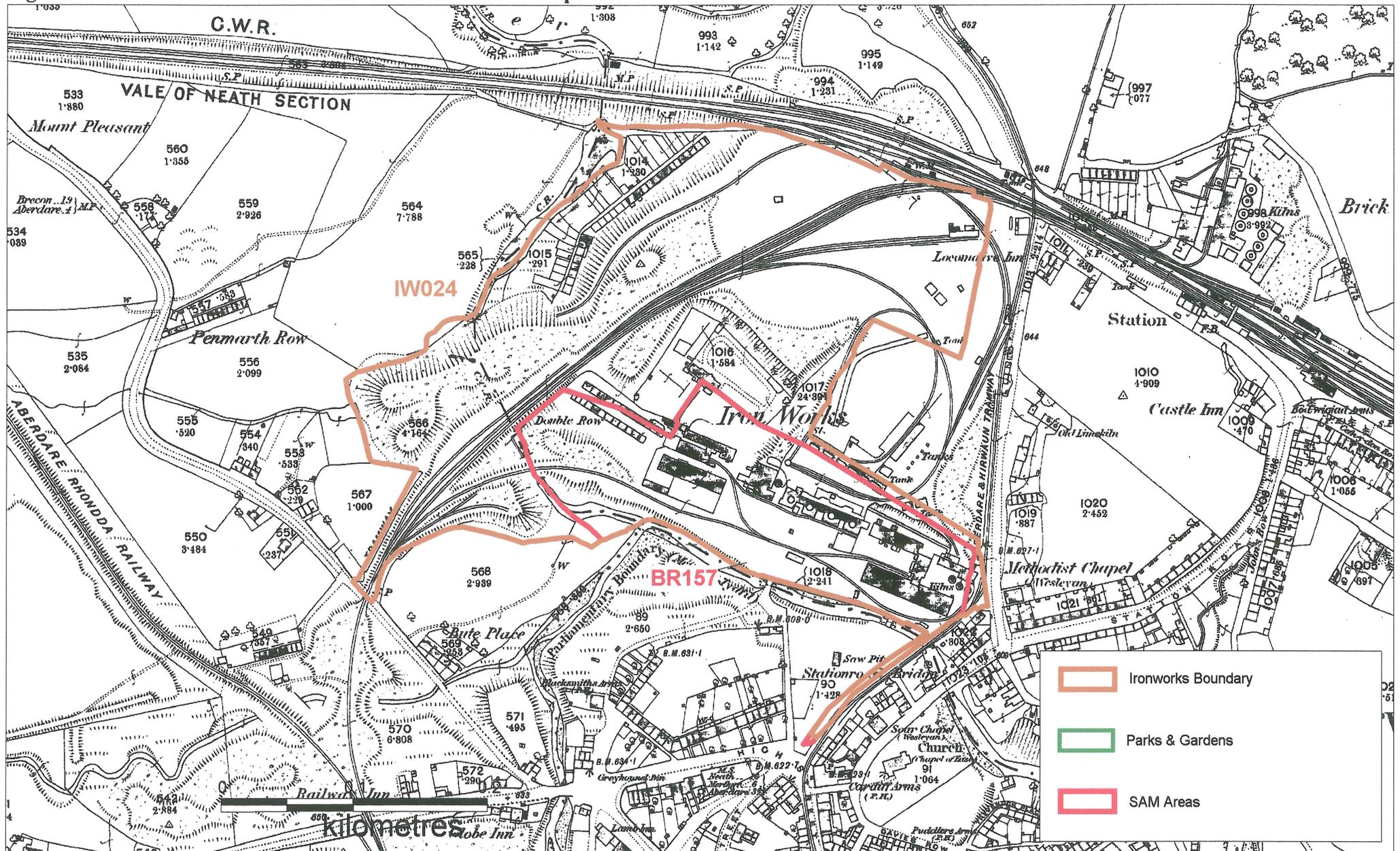
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Figure 29b Hirwaun Ironworks IW024 on 1st edition OS map base



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IW Number 025 Llwydcoed Ironworks (01393m) SN 9930 0440

General Description

The Llwydcoed Ironworks (NPRN: 40,454; PRN: 01393m), comprises the as yet undeveloped site of an early 19th century ironworks, founded in 1800, of regional if not national significance, part of a wider conglomeration of works under the auspices of the Aberdare Iron Company including at first through purchase Abernant (1819), and thereafter the Penydarren, Plymouth and Treforest ironworks.

The first edition 1:2500 OS map shows a bank of three furnaces (SN 99319 04419) at the then disused Llwydcoed Ironworks site, the construction of two of which date to the pre 1805 period, the third to c. 1823. In the area east of the furnaces is a linear bank of three limekilns (SN 99348 04396), a long rank of possible calcining kilns, a large coke yard with two parallel ranks of coke ovens (SN 99418 04428) aligned east-west and a reservoir at SN 99352 04470; the sites of the latter two features now lie beneath a playing field and recently constructed housing. The second edition OS shows the disused works in a partly cleared state, the three furnaces in place as well as limekilns (partly dismantled) and coke ovens. By the survey of the third edition the site is in use as the Aberdare Brickworks with its five circular kilns, while the coke ovens, and limekilns now appear to have been demolished, the northern two of the three furnaces still appear to stand at this date. The site of the furnace bank is now densely wooded: the exact condition of any standing remains associated with the furnaces themselves is unknown; buried remains of the furnace bases, however, are considered likely to survive.

Also included in the ironworks area from the first edition OS are Founders' Row (SN 99359 04342), a terrace of early 19th century ironworkers' cottages, the nearby old balance pit and level (ironstone and coal) at SN 99416 04292, the site of a sawpit at SN 99238 04429, and the site of the internal works tramroad. The current condition of these features, apart from Founders' Row, which appears to be in good condition though altered, is unknown.

Historical Background

The Llwydcoed Ironworks (also known as the Aberdare Ironworks) was founded in 1800 following the formation of the partnership comprising John Thompson, John Hodgett and George and John Scale. Two furnaces were built initially, each 40ft. high with a diameter across the boshes of 14ft. The furnaces were waterwheel blown the machinery constructed by Hazeldines's Foundry at Bridgnorth for £12 a ton. In 1805 the two furnaces produced 3,586 tons of iron.

In 1823 the company was operating three furnaces at each site and produced 5,676 tons of iron, which had risen to 11,440 tons in 1826, and 12,571 tons in 1830. There were two steam engines operating at Llwydcoed in 1837. When in 1846 the company was sold to settle a dispute, the site comprised three blast furnaces, two engines and two large waterwheels for blowing, mine kilns and suitable workshops. Under the Aberdare Iron Company managed by Rowland Fothergill and later Richard Fothergill, puddling furnaces were added and the works modernised. The chief engineer, Thomas Hosgood formerly of the engineering works of the Neath Abbey Iron Company, appears to have been responsible for the addition in 1852 of two 12in. horizontal engines and a 9 1/2in. inverted vertical engine both from Neath Abbey.

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In 1860 the Llwydcoed ironworks comprised three blast furnaces, twenty hot blast stoves, fifty-six coke ovens, six mine kilns, three limekilns, three blowing engines and two waterwheels of 40ft. diameter and 4ft. breadth. Expansion continued at Aberdare with a very large furnace being put into blast in 1861. In the week ending 4th July 1863 the production figures of the company's furnaces at Llwydcoed alone were:

Aberdare No.1 - 287 tons.

Aberdare No.2 - 300 tons.

Aberdare No.3 - 214 tons.

Output was again improved in 1865 when a new blowing engine and blast furnace were put into operation at Llwydcoed. Investment in this joint stock company was continuing to finance expansion with the concern becoming one of the largest suppliers to the wrought iron rail trade. A full picture of the extent of the Aberdare Iron Company is revealed in a description of its works published in 1869. At that time Llwydcoed had three blast furnaces each 42ft. high with a diameter of 18ft. across the boshes, two of these furnaces were in blast. The coking of the coal for Abernant and Llwydcoed was achieved using 168 coke ovens. The blast at Llwydcoed was partly supplied by two waterwheels probably built at Hazeldine's Foundry; these were 40ft. diameter and 5ft. wide positioned one above the other and operated two 54in. blowing cylinders. Four additional beam blowing engines provided the blast, one engine with an 84in. x 6ft. blowing cylinder, one with a 64in. x 7ft. blowing cylinder, one with a 78in. x 7ft. blowing cylinder and one engine having two blowing cylinders each 54in. x 6ft. All the engines blew into one large blast pipe. At Llwydcoed the iron was processed in three double refineries but all the puddling took place at the company's other works at Abernant.

Despite contraction in the early 1870s, the company retained a major share in the rail export market, supplying rails, for example, to New Orleans, New York, Montreal and Pacasmayo and in 1874 large orders were supplied to Alexandria and France. However, the collapse of the wrought iron rail trade led to the closure of the Aberdare iron Company's works including Llwydcoed during 1875 (Ince 1993, pp 35-39).

Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on a plan of 1846 (GRO D/D X 835/1/1,2) and on the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

Threats to the area as identified from the UDP are in the form of housing development HP11 mixed residential scheme.

At the time of the site visit it was noted that the area was the property of a developer (Jarvis Property) and that some site clearance activity appeared to be underway. According to the planning office at Rhondda Cynon Taff CBC no planning application had been submitted (13/9/04).

The site lies on private property, and access for the purpose of the initial site visit was made along an adjacent public right of way, which afforded a limited view of the area. A visit and survey with permission of the owner will be required to ascertain the extent of surviving/standing

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remains, in particular those of the furnaces. Once this has been carried out further recommendations might be formulated.

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Plate 013 Llwydcoed Ironworks IW025



Plate 013: Llwydcoed Ironworks site with clearance activity in progress, view to northwest. Furnace site lies within wooded area beyond redbrick structure on right hand side of the picture.

IW Number 026 Gadlys Ironworks (02162m and 02344m) SO 001 030

General Description

The Gadlys Ironworks (NPRN: 34,088; PRN: 02162m) is a nationally important ironworks of early 19th century foundation, noted for its quality casting product and engine parts during its day. The site retains rare surviving features in excellent condition, including furnaces, casting sheds, blast engine house and calcining furnaces; these are currently protected by scheduling and listing. Buried remains of other features may also survive. The site has sustained some loss with the area above and to the west of the furnaces, which included the coke yard and coke ovens was developed for housing during the early 20th century, while the level area to the east has recently been developed for retail use.

The first furnace was built by Mathew Wayne in 1827-8; a second was in blast by 1854, while two further furnaces were added in 1855-6. The furnaces were blown out in 1875, following the depression of the early 1870s. By the 1880's the company restricted operations to coal extraction, while the buildings in front of the furnaces formed a brick and wagon works by the survey of the second edition 1:2500 OS map.

The furnace area of the Gadlys Ironworks (PRN: 02162m; NPRN: 85,109) located at SO 000 030, has been scheduled (SAM Gm438). The site comprises the intact remains of the charging bank built against a steep scarp, located to the rear of the former Stores Building (PRN: 02042m; NPRNs: 34,884 and 40,450). The former Stores Building (Listed Grade II Cadw ref: 10,844), a twin gabled ranges of dark rubble with brick facings, currently in use as a museum, is itself of interest as it possibly incorporates the remains of the casting house thought to date to 1855-6. This building appears to have been reused as one of the Wagon Repair Shops (NPRN: 85,107) at SO00030301.

Other standing structures of note include an imposing intact Grade II Listed (Cadw ref: 10,842) engine house (PRN: 02344m; NPRN: 33,707) to the south of the furnaces at SO 001 030, adjacent stone revetments (Grade II Cadw ref: 10,843) and the former Calcining Furnaces situated to the rear of no. 17 Elm Grove (Grade II Cadw ref: 10,846). Additional sites identified by the RCAHMW in the area are an Electrical Power House (NPRN: 85,106) at SO00060297 and a Refuse Destructor (NPRN: 85,108) at SO00070300.

Other features identified on the first edition OS 1:2500 map include the following: the Works Internal Tramroad Network, Stables (SO 00123 02981); Coke Ovens (SN 99951 03010); Boilers (SO 00037 02919); a Kiln (SO 00199 02967), and the Works Office at SN 99942 02894, the site of which is now partly taken by the Gadlys Higher Standard School, (NPRN: 310,035).

Historical Background

The Gadlys Ironworks was the third ironworks to be built in the Aberdare area, founded in 1827. The partners who set up this single furnace ironworks were George Rowland Morgan, Edward Morgan Williams and Matthew Wayne. Wayne had been a furnace manager at the Cyfarthfa Ironworks and then was involved in the development of the Nantyglo Ironworks. The furnace was first put into blast in 1828 and was blown by a 34 in. beam blowing engine supplied by the Neath Abbey Iron Company. When the works was advertised for sale in 1835 it comprised 350 acres of mineral property with an ironworks employing 150 people. The single furnace was described as being able to make 1,700 to 2,000 tons of iron annually, blown by an engine, which

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also supplied the blast to a refinery. Other property on the site included a cast house, stove room turning room, cupola, smiths' shop, weighing machine, bridge house, carpenters shop, office, punching machine and turning lathe. There were also three calcining kilns for burning off the impurities in the iron ore. The iron produced at Gadlys was praised for its strength in castings and for engine parts. No less than 5,600 yards of tram plates weighing 200 tons were present in 1835 in and about the works. A coal pit was situated close to the works and was drained by two 8in. pumps, one worked by a 24ft. diameter waterwheel and the other by a high-pressure steam engine. A sale of the ironworks does not appear to have been negotiated for the concern remained in the hands of a company headed by Matthew Wayne (1780-1853) and after his death Gadlys was managed by his son, Thomas Wayne (1810-1867).

During the latter part of the 1840s the works was expanded: in 1845 a 24in. beam engine was supplied by the Neath Abbey Iron Company, followed in 1847 by a 12in. engine. By 1850 there were three furnaces in blast and a further engine with a 30in. cylinder had been supplied by the Neath Abbey Iron Company. The number of furnaces at Gadlys had risen to four by 1854 but in that year only two were in blast. The Gadlys Iron Company concentrated on producing cold blast iron for tinplate bars or ductile armour iron. Production was diversified when, in 1861, a small rail mill was built which could roll merchant bars or rails. One of the furnaces at Gadlys was rebuilt in 1869 and a further rail mill was constructed giving the works the capacity to produce 500 to 600 tons of rails per week. The Gadlys Ironworks was listed in 1872 as operating fifteen puddling furnaces and two rolling mills and in that year the owners reorganised under the title of the Gadlys Coal and Iron Company Limited which was later changed to Wayne's Merthyr Steam Coal and Iron Works Limited. The ironworks continued to produce cold blast iron until its closure in 1876 and in the following year it was put up for sale. No prospective purchasers came forward and the furnaces were never put into blast again although the associated collieries continued to be worked (Ince 1993, p 40).

Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

There are no identified threats to the area as identified from the UDP, however the area to the west and above the furnace site is now housing, while the area to the east of the furnace and adjacent former casting house has been developed for retail use and car parking. Any future proposals to add to this development will need to be monitored.

It was noted during the field visit that the Listed Calcining Furnaces (Grade II) located west of and outside the current scheduled area of the Furnaces are in excellent condition, and appear to have recently undergone restoration.

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Plates 014-015 Gadlys Ironworks IW026

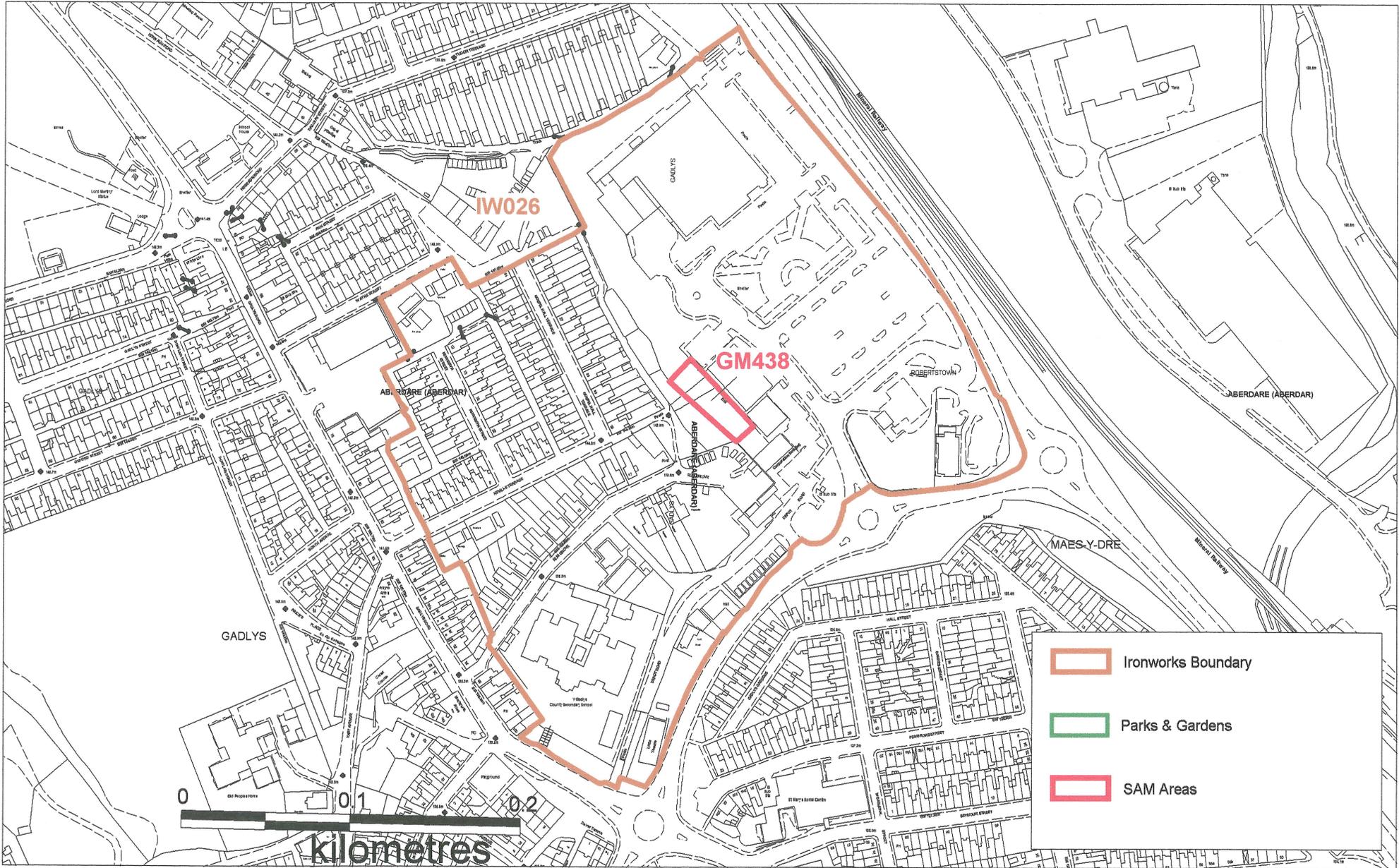


Plate 014: Former stores building or casting shed, Gadlys Ironworks (Listed Grade II), view to northwest.



Plate 015: Calcining Furnaces Gadlys Ironworks (Listed Grade II), view to northeast.

Figure 31a Gadlys Ironworks IW026



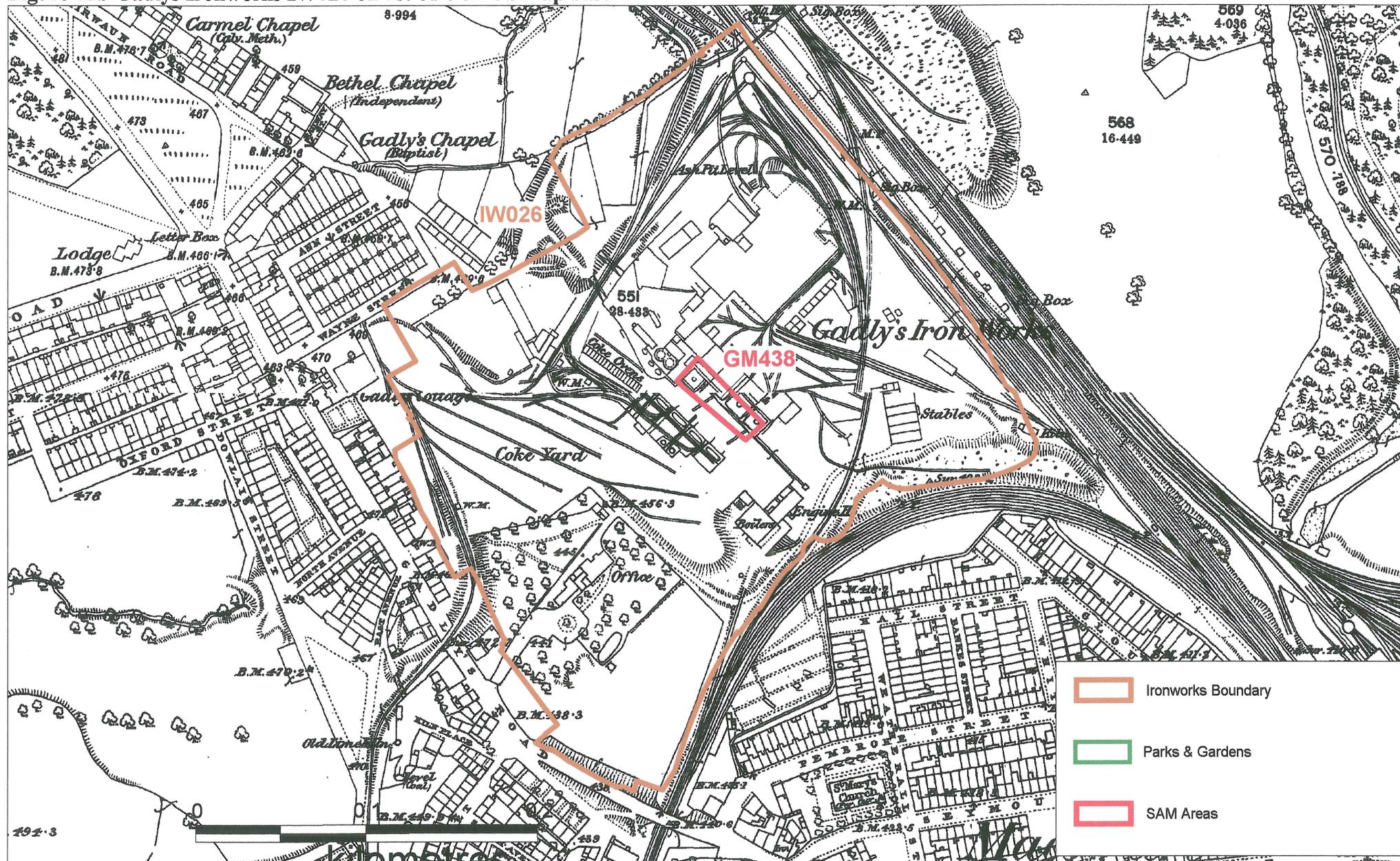
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Figure 31b Gadlys Ironworks IW026 on 1st edition OS map base



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IW Number 027 Abernant Ironworks (01264m) SO 0090 0340

General Description

The Abernant Ironworks (NPRNs: 34,069 and 40,441; PRN: 01264m) is an early 19th century ironworks, founded in 1801, of regional if not national significance. The Abernant Ironworks later became part of a wider conglomeration of works under the auspices of the Aberdare Iron Company following its purchase in 1819. The Ironworks comprised three furnaces constructed between 1801 and 1807, and numerous forges, mills and puddling furnaces.

The first edition OS 1:2500 map depicts numerous features within the area, none of which survive today above ground. These included the following: two furnace sites at SO 00940 03475 and SO 01011 03433 and a probable third at SO 01062 03443, an extensive coke yard to the north of the furnaces with groups of ovens at SO 00929 03564, SO 00853 03516 and SO 01083 03504; Limekilns at SO 01018 03496, SO 00923 03503 and SO 00883 03499, a mine kiln (SO 01011 03503), smithy (SO 01063 03563) and Pumping Engine at SO 00816 03391, a several reservoirs such as Furnace Pond.

The 1st edition OS map also names the Abernant Ironworks Offices; this building appears to still stand and has been converted to domestic use, currently 1-4 Office Houses. The area also contained former industrial workers' housing just within its southern boundary: Long Row, and Arch Row, all of which have been subsequently demolished.

During the 1970s the Abernant Ironworks site was extensively cleared, though the general landform appears to have been retained, and for this reason it is considered that buried remains may survive. The Ironworks and its associated Forge Mills formed an extensive area; for the purpose of the current project the Forge Mill, the site of which has been previously developed for housing, has been excluded from the core ironworks area itself.

Historical Background

The Abernant Ironworks was founded following the lease of the Abernant property in 1801 for 99 years to Jeremiah Homfray of Llandaff and James Birch of Aberdare. Three furnaces were constructed by 1807. An expansion on the original two furnaces identified from the lease conditions was enabled when the three Tappenden brothers join the partnership in 1802. During the initial period of operation the works was involved with the development of high-pressure steam engines and several Trevithick type stationary engines were known to have been constructed at this time by the Abernant Iron Company.

Homfray and Birch retired from the company in around 1807. In 1819 the Abernant Ironworks was sold to the Aberdare Iron Company, following a costly dispute between the Tappendens and the Neath Canal Company, which had ended in bankruptcy in 1814.

In 1823 the Aberdare Iron Company was operating three furnaces at each of its sites (Abernant, Llwydcoed and Aberdare) and was producing 5,676 tons of iron; this rose to 11,440 tons in 1826 and 12,571 tons by 1830. The enterprise continued to expand and by 1837 five engines were in operation at Abernant. Despite success and expansion, the company was sold to settle a dispute in 1846. Sales catalogues record that Abernant at the time comprised three blast furnaces, two blowing engines, a foundry, brick stove and kiln and a waterwheel for grinding clay and working lathes. Also at the Abernant site were fineries with a blowing engine.

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Purchased by a new company, the Aberdare Iron Company; under the management of Rowland and later Richard Fothergill. During the period puddling furnaces were added and the works modernised.

In 1860 the puddling furnaces at Abernant were increased in number, however, by 1862 the Abernant Ironworks was only operating two furnaces. At this time the production of iron by the company's furnaces was at about the 800 tons per week mark. Some production figures are available for the early 1860s and from these we find that No.1 furnace at Abernant produced 349 1/2 tons of iron in the week ending November 7th 1862 while during the same period No.2 furnace at Abernant turned out 278 tons. These furnaces served seventy puddling furnaces, a large rolling mill and two smaller mills. In the week ending 4th July 1863 the production figures of the company's furnaces at Abernant were:

Abernant No.1 - 287 tons.

Abernant No.2 - 343 tons.

A full picture of the extent of the Aberdare Iron Company works at Abernant is revealed in a description of its works published in 1869. At that time the coking of the coal for both Abernant and Llwydcoed was achieved using 168 coke ovens. While the iron was processed in three double refineries at Llwydcoed, all the puddling was carried out at Abernant, the two sites being connected by rail. The furnace in blast at Abernant in 1869 was 40ft. high and 19ft. in diameter across the boshes, another furnace ready to be lit was 52ft. high and 18ft. in diameter across the boshes. The furnaces were closed with bell and hoppers and were blown with a hot blast at 850^oF. The blast was supplied by five beam blowing engines, one engine with a 78in. x 7ft. blowing cylinder, one with a 68in. x 6ft. blowing cylinder, one with a 52in. x 5ft. blowing cylinder and two engines working four 30in. x 2ft. blowing cylinders.

The forges and mills at Abernant covered a very large area with the buildings consisting of iron roofing carried on cast iron columns. There were seventy-eight puddling furnaces at Abernant supplying four trains of 19in. puddle bar rolls driven by four steam engines. The puddling furnaces received their draught from eight 48in. Lloyd's patent noiseless fans driven by two 10in. engines. There were also twenty-seven balling furnaces and twenty-one of these received a draught from six 48in. Lloyd's fans. The mills included two large rail mills and others for blooming fish-plates and Russian chair plates; these mills were driven by three engines. There were also thirteen engines for driving saws, presses and punches including two 10in. engines for driving fans. One pair of shears was actuated by a single cylinder engine making 150 strokes per minute and was used to cut cold bars for the top and bottom of rail piles. Fifteen boilers provided steam for the engines at the mills and forges. There was also present a Lilleshall double acting steam hammer used for special orders and another was being made for the company. The forges produced 1,200 to 1,300 tons of puddled bars per week, which supplied the mills at Abernant and Treforest. These mills were capable of producing 1,150 tons of railway iron per week. Also at Abernant were extensive foundries, smiths', carpenters' and fitting shops with the capability of making steam engines up to sixty horse power.

There seems to have been some contraction in the capacity of the company in the early 1870s, and the collapse of the wrought iron rail trade finally led to the closure of the ironworks at Abernant during 1875 (Ince 1993, pp 36-39).

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Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on a plan of 1846 (GRO D/D X 835/1/1,2) and on the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

Threats to the area as identified from the UDP are in the form of development for housing (committed site).

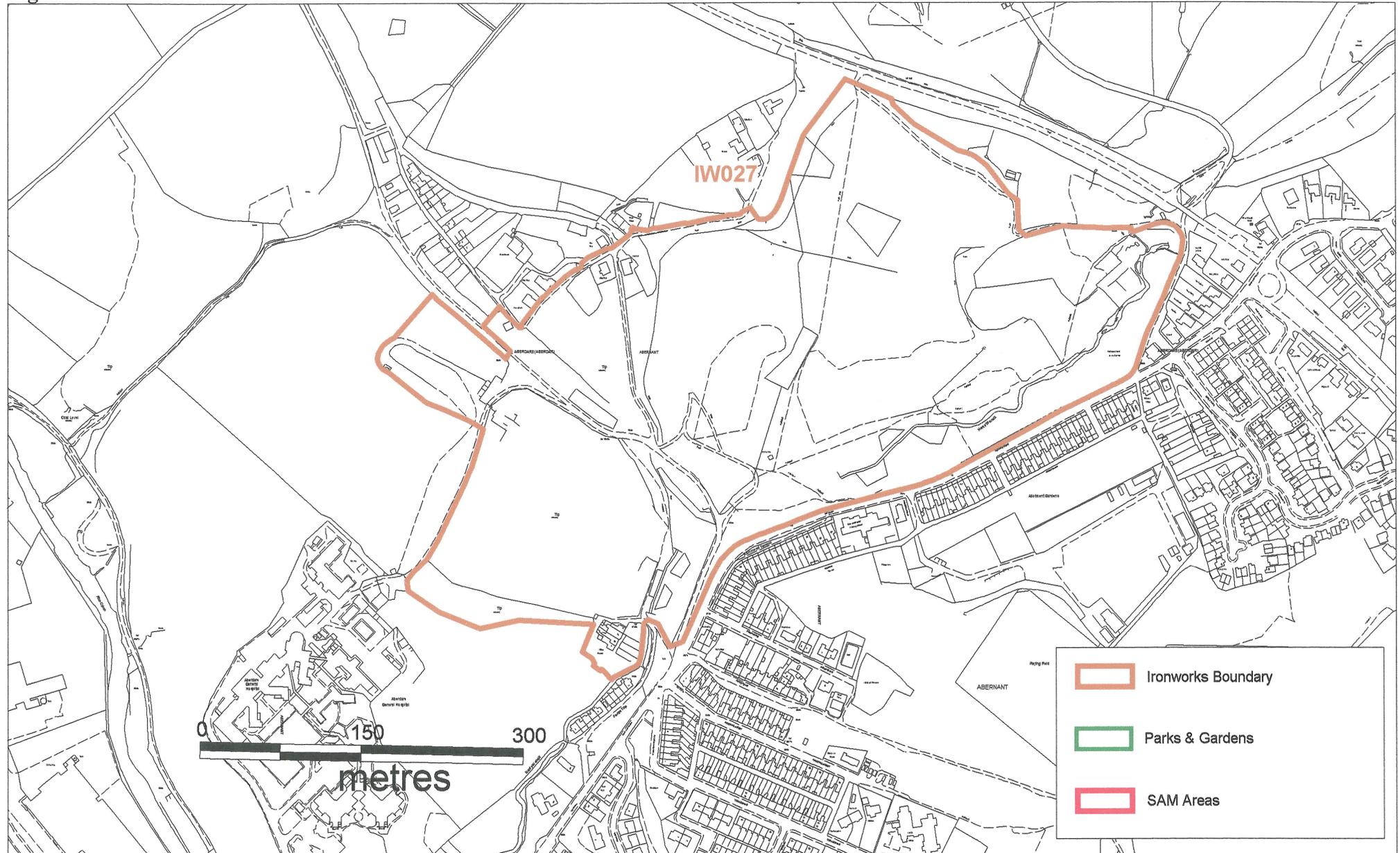
The area has been extensively reclaimed, though some possibility of buried remains relating to the furnaces may survive; further evaluation would be needed to confirm this. Some building footings and platforms, relating to structures of unknown purpose were noted along the southern edge of the area during the field visit.

Plate 016 Abernant Ironworks IW027



Plate 016: View towards Furnace area at Abernant Ironworks (PRN: 01264m), view to northeast.

Figure 32a Abernant Ironworks IW027



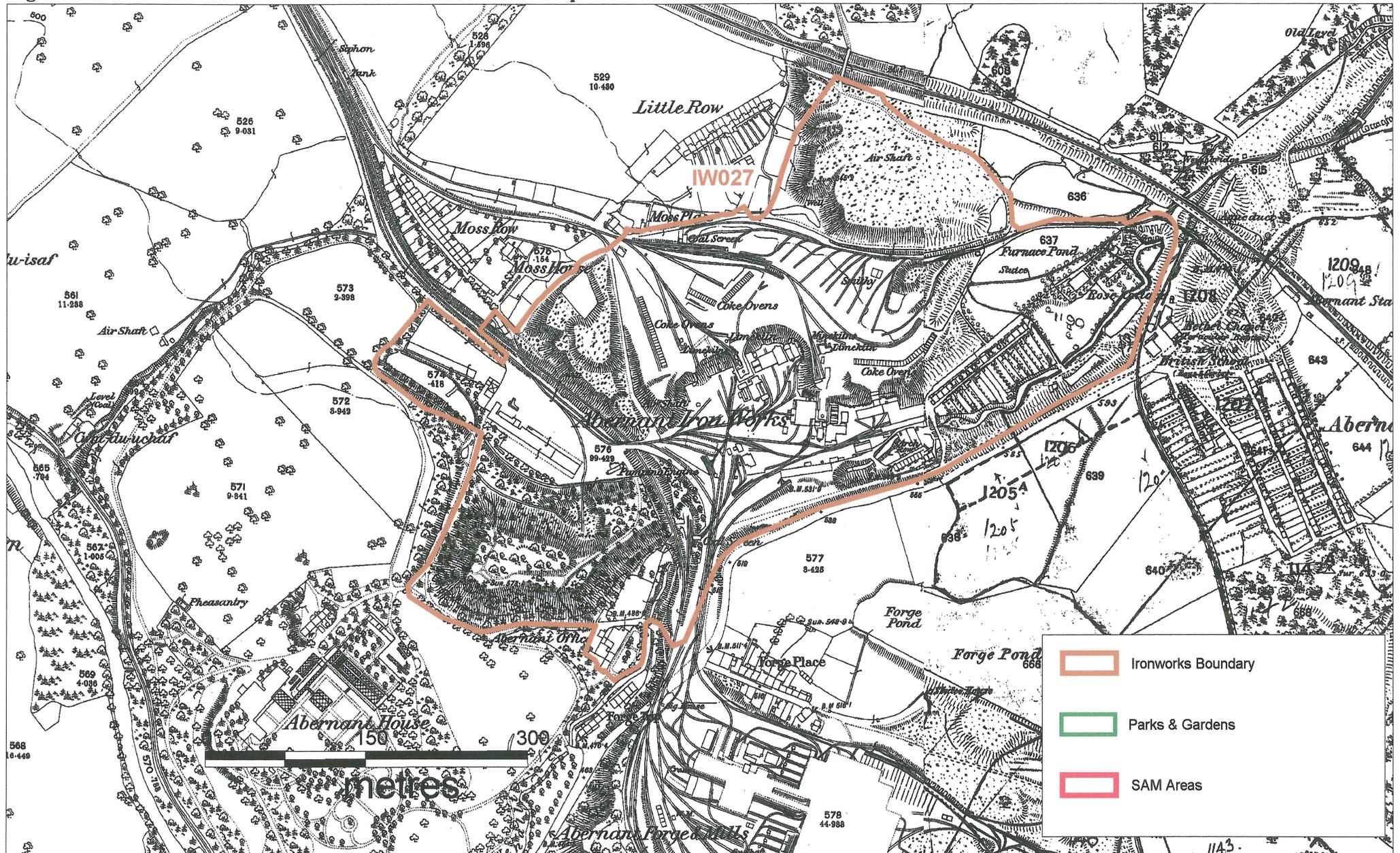
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Figure 32b Abernant Ironworks IW027 on 1st edition OS map base



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IW Number 028 Aberaman Ironworks SO 01509 00300

General Description

The Aberaman Ironworks comprised a short-lived mid 19th century ironworks dating from 1845, when three furnaces were constructed, a fourth being added by 1867. While being of interest for its association with entrepreneurial ironmaster Crawshay Bailey of Nantyglo and Beaufort Ironworks, was otherwise unexceptional. In fact greater importance was attached to the mineral ground, exploited by the Aberaman Colliery (NPRN 80,548). The 1st edition OS 1:2500 map depicts the furnace bank at SO 01511 00287. Other features identified on the 1st edition OS map included limekilns at SO 01514 00258 and SO 01547 00431, the internal tramroad network with the Tre-aman siding and the Black Band Pit (SO 01499 00146).

The Aberaman Colliery site, indicated on the 1st edition OS as being centred on a shaft at SO 01597 0380 is enlarged by the end of the 19th century to encompass the entire area of the former ironworks site (2nd edition OS 1:2500). The furnaces appear to have been cleared by this date, the only structure surviving is a limekiln at SO 01514 00258; later removed by the survey of the 3rd edition, following remodeling of the colliery site.

The site is currently devoid of any above ground remains, having been cleared and reclaimed (to a poor standard) during the 1970s. The survival/condition of buried remains is unknown, but it is considered unlikely that significant remains survive in a buried state due to the site's history of remodeling and later continued use for colliery purposes.

Historical Background

The Aberaman Ironworks developed after the rich mineral estate of Aberaman in the Cynon Valley was purchased in 1837 by Crawshay Bailey. Bailey. In 1845 he constructed three furnaces on the property. A 44in. x 9ft. beam blowing engine with a massive 122in. blowing cylinder was purchased from the Neath Abbey Iron Company to provide the blast.

Although the furnaces were out of blast in 1854 they were continually at work from 1855 until 1866. There was an attempted sale of the works in 1862 for £250,000 and another in 1864 when a £100,000 deposit was paid and the Aberaman Iron Company floated. The affairs of the Aberaman Iron Company were, however, eventually wound up by the Court of Chancery in 1867 and the ironworks taken over by the Powell Duffryn Steam Coal Company. At that time the works comprised four furnaces, seventeen puddling furnaces, a small forge and a mill. Although there were reports in 1868 of the alteration of the buildings into a tinworks and reports in 1872 of repairs to the works, it would appear that the works remained abandoned. It would seem that the Aberaman Ironworks was acquired for its valuable mineral ground which continued to be exploited while the works remained unoccupied (Ince 1993, pp 40-41)).

Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

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Identified Threats

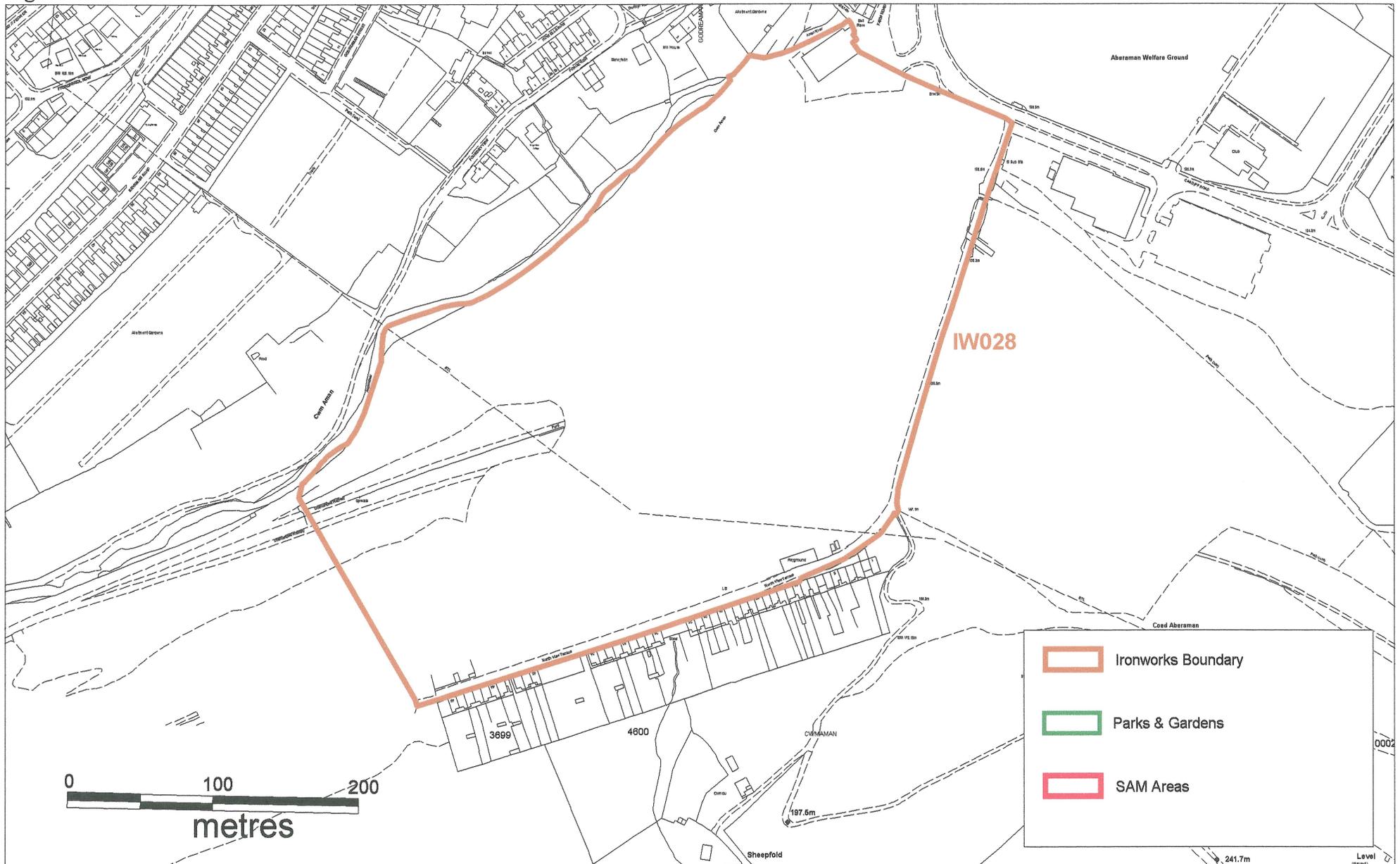
Threats to the area as identified from the UDP are in the form of further land reclamation. The area appears already to have undergone some reclamation following clearance during the 1970s. No features currently survive above ground on the site.

Plate 017 Aberaman Ironworks IW028



Plate 017: View across site of former coke yard, the furnaces would have stood to the right (treed area) view to southwest.

Figure 33a Aberaman Ironworks IW028



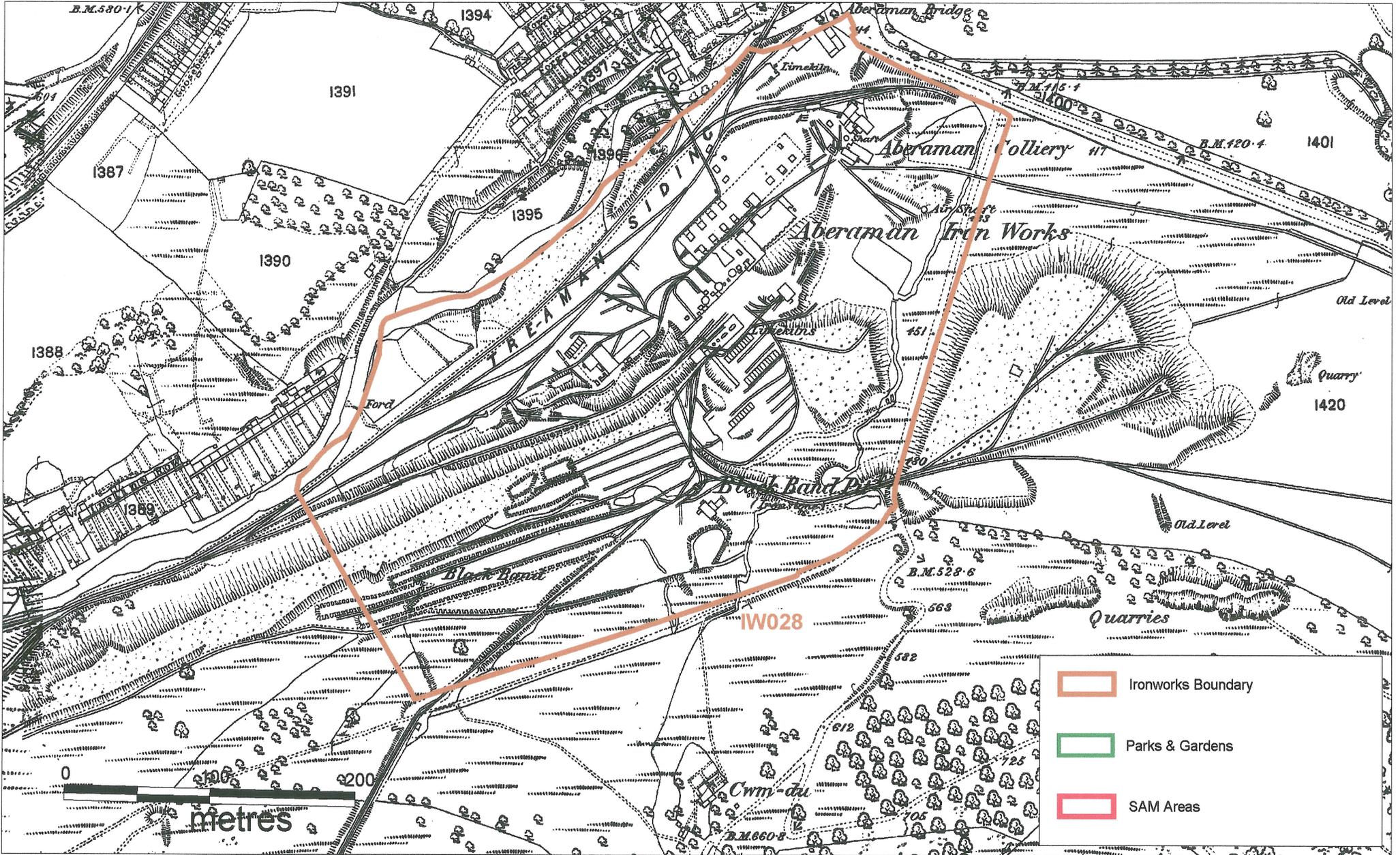
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Figure 33b Aberaman Ironworks IW028 on 1st edition OS map base



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IW Number 029 Ystalyfera Ironworks (01207w) SN 76450 08300

General Description

The Ystalyfera Ironworks (NPRN: 34,126; PRN: 01207w), typical of a type fuelled by locally available anthracite coal, which diversified into the area of tinsplate production, is a mid-19th century ironworks of some historical significance. During the 1840s and 1850s the Tinsplate works with between 12 and 16 mills was considered to be the largest in the world and the works' bank of 11 blast-furnaces was second only to that at Dowlais. After the reduced number of furnaces were taken out of blast in 1885, the tinsplate works continued production until 1946, when the buildings were finally demolished. Unfortunately much of the site was subsequently cleared and redeveloped and now little remains to indicate the importance and scale of the original works.

Cartographic evidence shows continuing alteration to the ironworks site between the first, second and third editions: many of the ironworks features depicted on the first edition 1: 2500 OS map (see below), had been cleared by the survey of the third edition. The area has today almost been entirely cleared of above ground remains; aerial photographs indicate much of the site was redeveloped by the late 1960s, after which single-storey factory units were constructed on the site. The massive stone wall of the charging bank survives west of the recent development and fragmentary remains of furnace sites also appear to survive: a blast furnace platform (PRN: 01207w) surviving adjacent to the canal at SN 764 084 noted in 1981 was noted during the field visit. Buried remains associated with the other furnace sites within the northern half of the site and within the narrow strip of land adjacent to the canal, might also survive. Thick vegetation was found to obscure much of this area during the field visit, however, and the exact condition of these features was not established. Much of the ironworks area was reclaimed from the river valley of the Tawe by the construction of impressive slag banks; these remain *in situ*.

The first edition 1: 25000 OS map depicts various features including the single anthracite furnace (PRN: 01207w) of 1838 at SN 764 084, a further possible furnace site to the south at SO 76369 08297, and the extensive bank of furnaces, constructed during the 1840s and 50s at SN 76491 08413. Also depicted are three kilns adjacent to the main furnace bank at SN 76463 08408, two offices (SN 76495 08352 and SN 76570 08314), the extensive tinsplate works (SN 76410 08196) in addition to an internal works railway/tramroad and an associated brickworks with adjacent shaft and old pit at the northeast end of the site (SN 76701 08638). The brickworks site is now a leisure facility of tennis courts and playgrounds.

Historical Background

The Ystalyfera Ironworks dates from 1838 when a single anthracite fired furnace was built by Benjamin Treacher and Evan James of Swansea. In the following year the works was sold to Brancker & Co., which consisted of Sir Thomas Brancker, JJ Hogan of Liverpool and Edward Budd of Swansea. The change of ownership seems to have led to additional investment at Ystalyfera, for a second furnace was under construction in 1839. It is probable that a 24in. Neath Abbey blowing engine was purchased at that time. Furnaces were periodically added to the works and in 1845 a 52½in. beam blowing engine was purchased from the Neath Abbey Iron Company.

Later by 1846, when under the ownership of James Palmer Budd the works was enlarged to contain six blast furnaces and diversified with the addition of a tinsplate works. Expansion of the

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site to twelve mills twelve years later, the tinplate works claimed to be the largest in the world. Budd also experimented with new iron producing techniques during the period, perfecting the use of waste gases generated in the furnaces to heat the air blast from the blowing engines. In 1848 improvements were made to the furnaces and production of each furnace at Ystalyfera increased to between 50 to 60 tons of iron each week: the six furnaces were linked by arches upon which five hot blast stoves were constructed.

Expansion of the works continued with Ystalyfera possessing ten furnaces during the 1850s although in 1854 only seven were in blast. During the 1860s the Ystalyfera Ironworks was able to keep six furnaces in production and in 1872 the concern boasted forty-two puddling furnaces and sixteen mills. The presence of puddling furnaces obviously indicates the use of bituminous coals at the works.

There was a gradual decline in the fortunes of the Ystalyfera Iron Company from the mid 1870s with only four furnaces in blast in 1877 and the men only working two weeks out of three. Following the retirement of Budd in 1880 and withdrawal of financial support in 1883, the Ystalyfera Ironworks closed in 1885. A 16 mill tinplate works continued in production until after World War II, the buildings being demolished in 1946 (Hughes and Reynolds 1988, p 17; Ince 1993, pp 162-163).

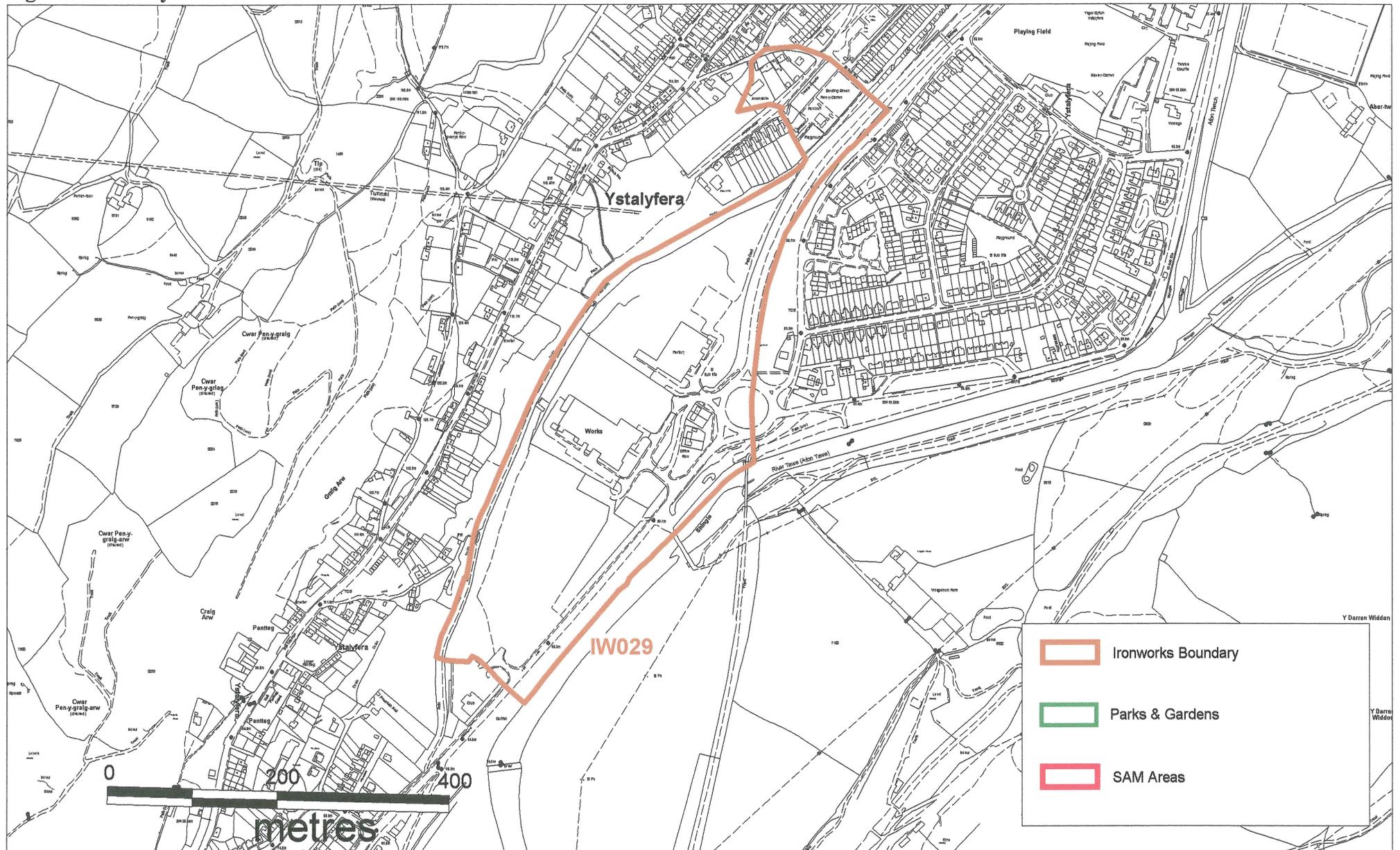
Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

No threats were identified from the UDP; the site has been partly reclaimed and redeveloped for light industrial use, though some original features do survive in the wooded slope along the area's western boundary. The area already re-developed for light industrial use is potentially at risk from future housing development; any such development should be covered by the planning process.

Figure 34a Ystalyfera Ironworks IW029



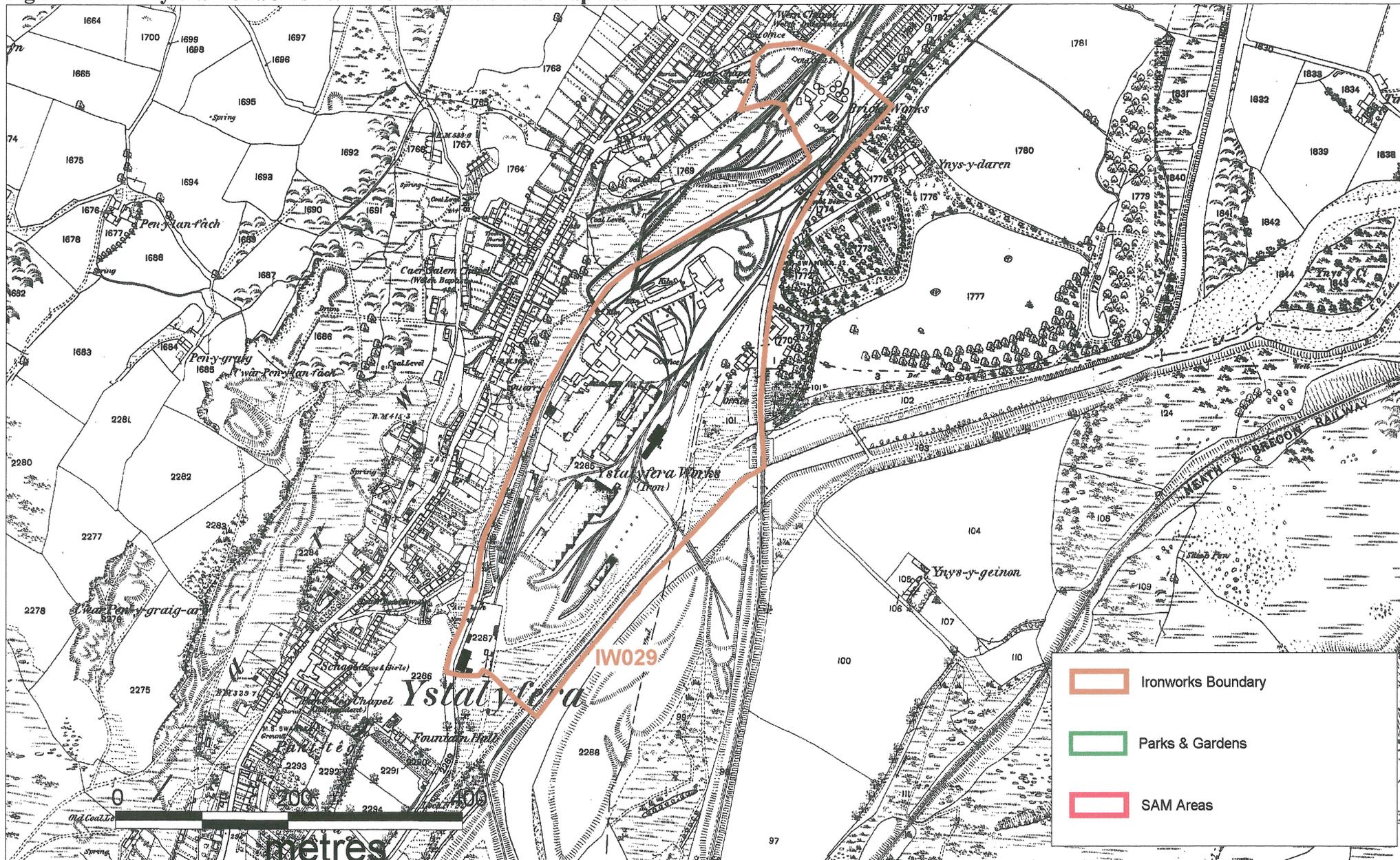
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Figure 34b Ystalyfera Ironworks IW029 on 1st edition OS map base



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IW Number 030 Ynyscedwyn SO 0690 0320

General Description

The Ynyscedwyn Ironworks (NPRN 34,037) was a nationally important ironworks of 18th century foundation, converted to coke fuel by the 1820s. In fact, the Ynyscedwyn Ironworks was the only ironworks site in South Wales to have used charcoal, bituminous coals and anthracite as fuels in iron production and was instrumental in developing technology which allowed the economic use of anthracite coal as a fuel in iron production ultimately leading to the emergence of a major iron-smelting industry not only in south-west Wales but also in the United States of America.

Illustrated in the early 1820s (National Library of Wales), the ironworks had two large blast-furnaces (one of 18th century date), steam blast-powered blast engine-house, charging bank and the small cupola furnace, used 1837 during the successful experimental use of anthracite fuel (Hughes 1990). Unfortunately the furnace remains were completely cleared in 1978, and the site partly redeveloped during the 1980s for the Ystradgynlais Community Hospital. The surviving remains include a brick-built arcaded mill/engine house structure with adjacent brick-built chimneystack (SN 78362 09209), located to the north of the former furnace bank. Nothing of interest now remains above ground in the area of the furnace bank, itself and it is considered that little is likely to survive on the site in a buried state.

During the mid-19th century the concern was extensively revamped and a completely new 'model' works (SN 7831 0912) was partially built in 1866-72. This remodeled plant never equaled the success of its predecessor and was finally closed in 1878. The first edition 1:2500 OS map depicts features associated with the remodeled plant, but also indicates that earlier features may have been incorporated in the later remodeling, possibly the two earlier furnaces (SN 78311 09121). Features extant at the survey of the first edition OS map include a Waterwheel (SN 78245 09308), Smithy (SN 78400 09198), Calcining Kilns (SN 78314 09445), Boilers (SN 78319 09208) and the works shop (SN 78243 09131).

The second edition OS shows further additions to the site relating to the Tinsplate Works (SN 78306 09212) added in 1889, following the closure of the ironworks itself. The Tinsplate Works stood in the vicinity of the current ambulance station.

Historical Background

The Ynyscedwyn Ironworks in the Swansea Valley was instrumental in solving the problems associated with using anthracite for producing iron. The Ynyscedwyn works possesses a long history and it is the only South Wales ironworks' site to have produced iron using charcoal, bituminous coals and anthracite as fuels. A charcoal fired furnace was in blast at Ynyscedwyn during the eighteenth century when for part of the time it was a component in the iron making empire of the Crowley family. During the 1770s and 1780s the furnace was in the hands of various people, including Thomas Price, John Miers and David Tanner, and Richard Parsons. The furnace continued to be charcoal fired and during 1796 produced 800 tons of iron. However, the date of changeover to coke firing is not documented and so the 1796 figure could possibly represent the output of coke iron. The furnace at Ynyscedwyn was still in blast during 1805 but the Parsons' family was forced to close the works in 1817. The ironworks remained unoccupied until the early 1820s when George Crane of Bromsgrove purchased it. Certainly by this time it was coke fired. In 1823 the single furnace at Ynyscedwyn produced 1,498 tons of iron with a

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second furnace being built in 1830. Crane and his works' manager, David Thomas, set about experimenting with the use of local anthracite as a fuel in the furnace. The results of these experiments were the successful production of iron using anthracite with a hot blast and the granting of a patent in 1836. Crane seems to have continued using a proportion of bituminous coals in his furnaces and this may explain the longevity of the enterprise when compared with the many unsuccessful anthracite ironworks in South Wales. A third furnace had been constructed by 1839 and in 1844 the blast was being provided by a 45in. x 8ft. beam blowing engine with a 90in. blowing cylinder. Two further beam blowing engines were constructed at the works with 60in. x 6ft. blowing cylinders supplied by Harvey & Co. of Hayle, Cornwall. By the death of Crane in 1846 the site has seven furnaces.

During the early 1850s the Ynyscedwyn Iron Company owned the works. In 1856 the number of furnaces on the site were reduced from seven to six although by 1862 only a single furnace was in blast. A complete closure of the works took place in August 1863 but conditions in the iron trade improved, which led to a reopening in the early part of 1864. During 1866 the furnaces at Ynyscedwyn were largely demolished and a new charging bank was constructed to feed to newly constructed circular metal clad furnaces; both of these were out of blast by 1869. A new company under T. Challender Hinde, who started iron production in 1870, then purchased the Ynyscedwyn ironworks. The new company, the Ynyscedwyn Iron, Steel and Coal Company, put the two furnaces back into blast and plans were drawn up to build a steel department at the works. In 1872 a forge or mill was started, however in November 1876 the venture was wound up with the buildings of the steel department unfinished. Machinery at the works was sold off in February 1878 with the site being abandoned until 1889 when a tinsplate works was built on the property (Hughes and Reynolds 1988, pp 17-18; Ince 1993, pp 161-162).

Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on the 1st, 2nd and 3rd editions 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

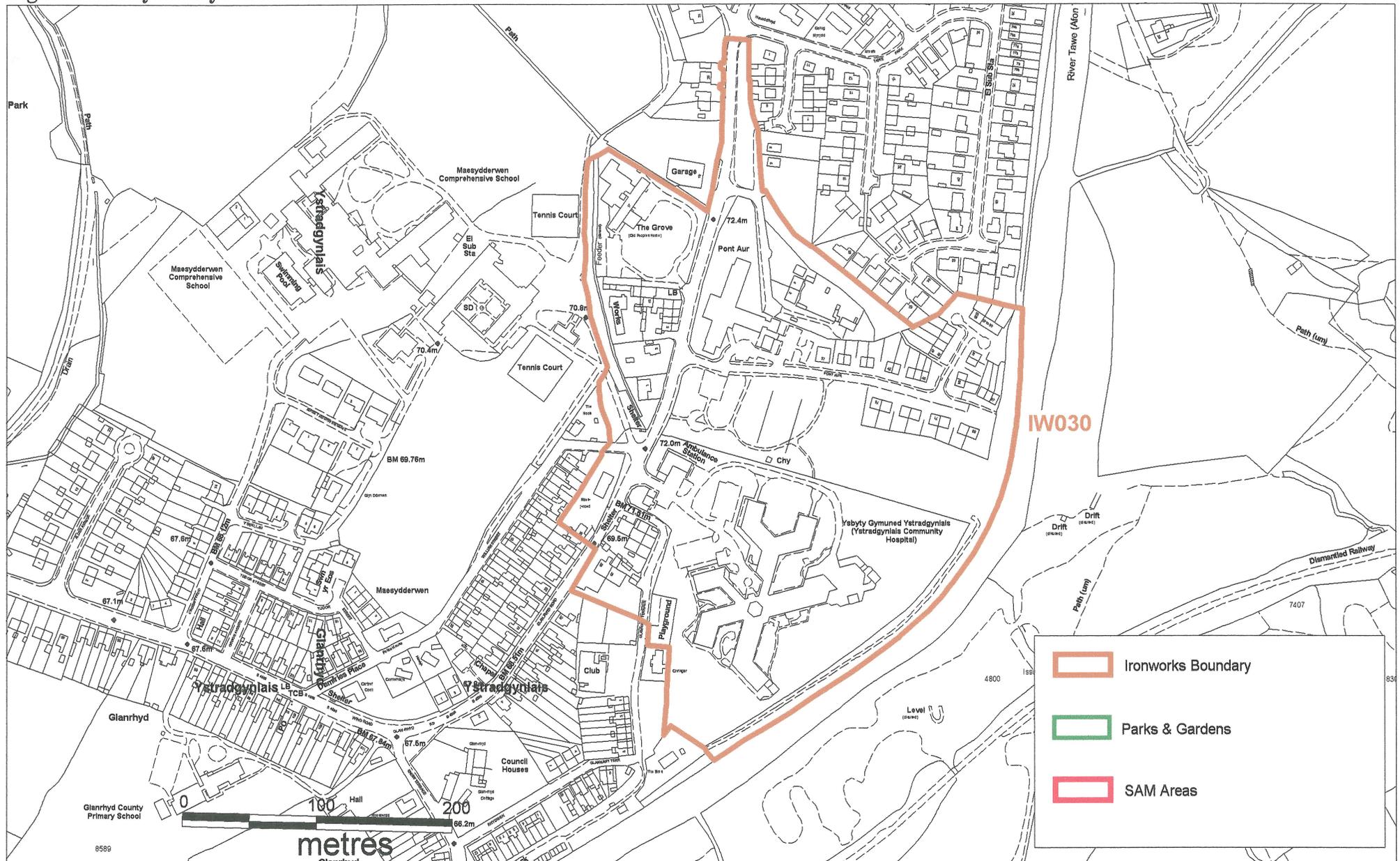
There are no threats to the area identified from the UDP; the area was extensively cleared of remains in 1978, and redeveloped during the 1980s. The Ystradgynlais Community Hospital now stands on the site of the furnaces. The surviving standing remains on the site, ie the mill/engine house with chimney (NPRN 34,037), have been recently conserved as Heritage Features.

Plate 018 Ynyscedwyn Ironworks IW030



Plate 018: Remains of the mill/engine house (NPRN 34,037) at Ynyscedwyn, view to southeast.

Figure 35a Ynyscedwyn Ironworks IW030



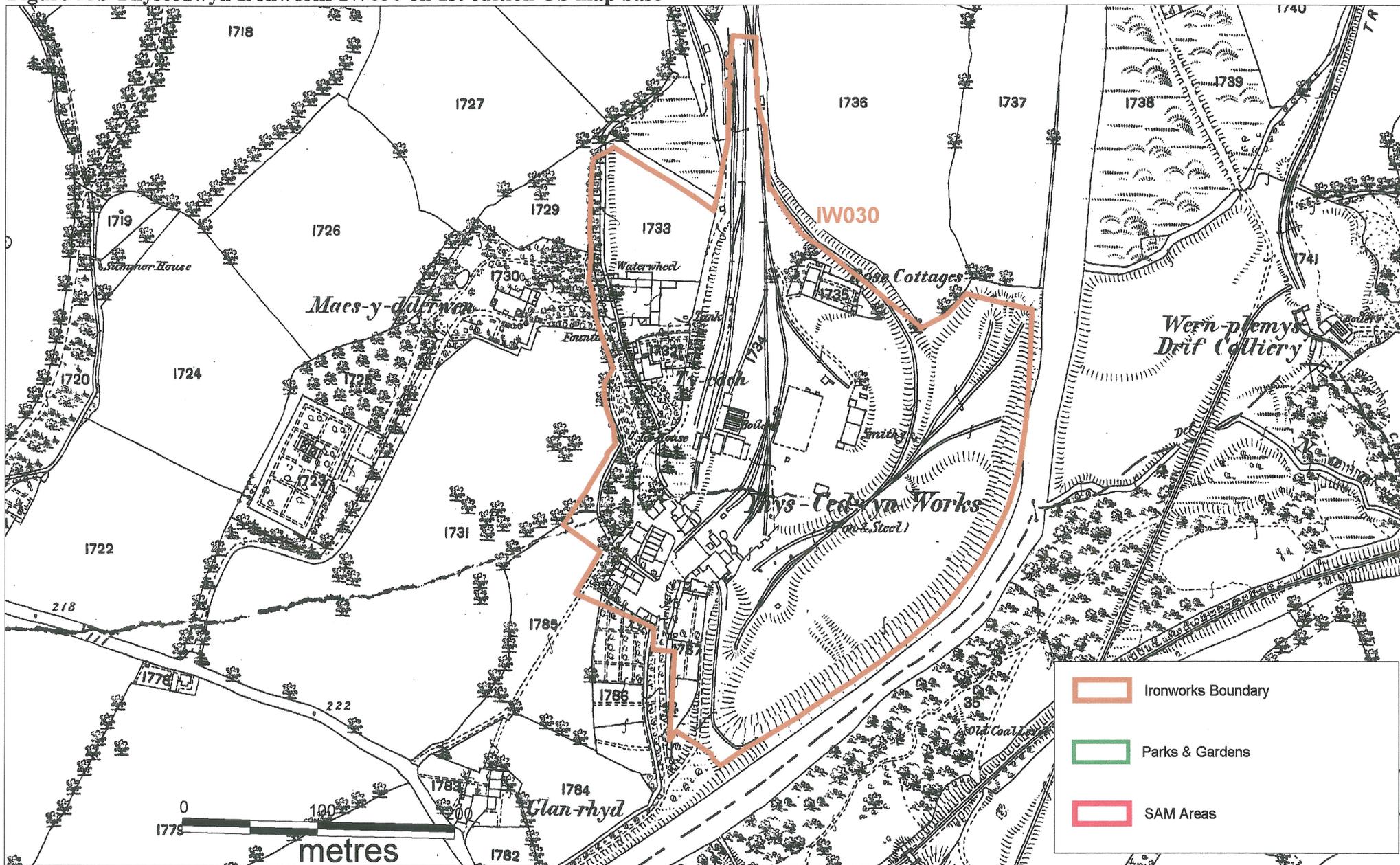
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Figure 35b Ynyscedwyn Ironworks IW030 on 1st edition OS map base



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IW Number 031 Onllwyn Ironworks SN 84020 10360

General Description

The Onllwyn Ironworks (NPRN: 80,156) was a short-lived and generally unsuccessful venture of mid-19th century date using anthracite as a fuel. Unfortunately no features of note associated with the Onllwyn Ironworks are considered to survive within the core area; aerial photographs indicate that the western two thirds of the site, including the furnaces, and the adjacent industrial housing had been removed by open cast operations by the late 1970s, with the eastern part buried beneath an associated tip and by 1985 the entire area had been reclaimed and 'landscaped'.

By the 1860s, when the Onllwyn Ironworks was at its greatest extent the site comprised a Smithy (SN 84074 10404), an Ironworks' Shop And Post Office (SN 84159 10364), in addition to two furnaces at SN 84020 10360 and associated calcining kilns (SN 83839 10333). Also extant by this date were two parallel rows of industrial workers' housing, Front Row and Back Row with a school at its west end, situated at SN 83775 10102, and the Onllwyn Pit (SN 83781 10203); these features were located just to the west and beyond the area adopted for the present study.

The site is shown disused and abandoned on the first edition OS 1:2500 map with the only features relating to the ironworks depicted being the dual limekilns (calcining kilns NPRN: 80,156) located at SN 8406 1027 south of the former blast furnaces, an incline leading to the furnaces from various workings to the south, including Coal Level 4 (NPRN 80,157), the ironworks shop (then a post office), and the adjacent Old Coal Drift (equates to PRN 80,161; NGR: SN 8418 1037).

The RCAHMW have identified two further features within the ironworks' area: the Khartoum Tip, BFT, (NPRN: 80,144; NGR: SN 8400 1035) and Coal Level 2 (NPRN: 80,154; NGR: SN 8384 1021) both associated with the Onllwyn Colliery Complex. None of these features now survives.

Historical Background

The Onllwyn Ironworks was constructed in the Dulais Valley in the early 1840s, and initially its two furnaces used locally available anthracite coal as fuel. The ironworks is known to have been in production in 1844 when the Neath Abbey Ironworks repaired a 21 1/2in. engine at the site. Neath Abbey also supplied a 24in. high-pressure engine to the Onllwyn Ironworks in 1846. In 1854 there was one furnace in blast with the works having been recently purchased by W. Llewellyn & Son who had interests in coal mining and tinsplate works in the Neath Valley.

By 1859, when the works was taken over by William Parsons, one furnace remained in blast. The process of producing iron using anthracite coal proved unsuccessful and the furnaces were modified to burn bituminous coal from 1861. During the period 1862-64 two furnaces were in blast and in 1864 the works was taken over by the Onllwyn Iron and Coal Company. The two furnaces remained in blast until the financial collapse of the company in 1866. Though a new company was formed under the same name, the furnaces remained out of blast and the works finally ceased to operate (Ince 1993, p 94).

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Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

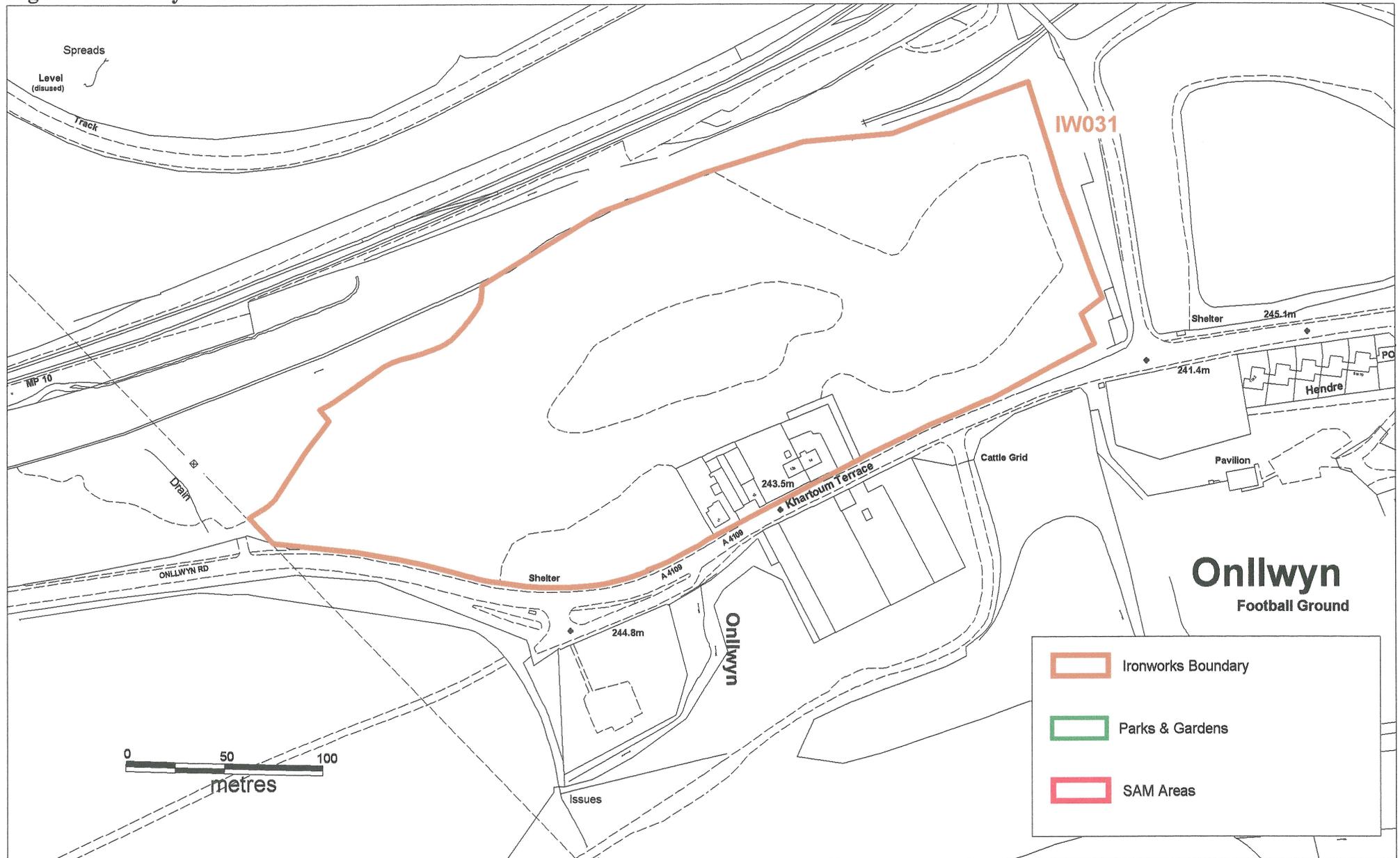
There are no known threats identified from the UDP. The area has been the subject of opencast operations with the result that nothing now survives of the ironworks site.

Plate 019 Onllwyn Ironworks IW031



Plate 019: The now opencasted and reclaimed landscape of the Onllwyn Ironworks, looking towards the site of the former furnaces, view to south.

Figure 36a Onllwyn Ironworks IW031

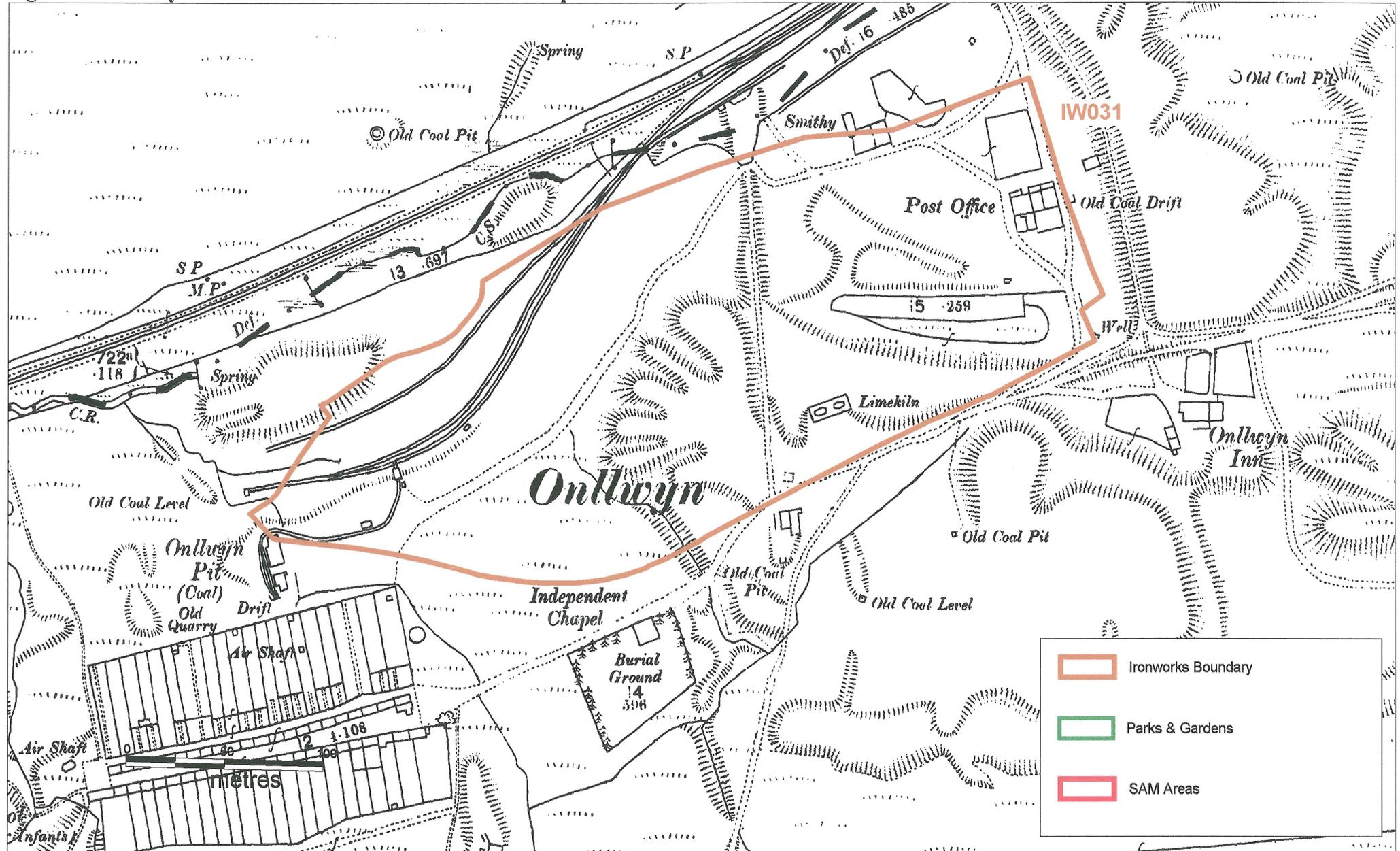


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Figure 36b Onllwyn Ironworks IW031 on 1st edition OS map base



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